REMARKS

In view of the following remarks, the Examiner is requested to allow Claims 1-4, 8-19 and 21-24, the only claims pending and under examination in this application.

Claim 1 has been amended to incorporate the elements of Claims 5-7 and 20, which have been correspondingly cancelled. Accordingly, no new matter has been added.

Claims 11 and 24 have been amended to clarify the claim language and to incorporate the elements of Claim 20, which has been correspondingly cancelled. Accordingly, no new matter has been added.

As no new matter has been added by way of the above amendments, entry thereof by the Examiner is respectfully requested.

Claim Rejections – 35 U.S.C. § 112

Claims 11-24 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As indicated above, Claims 11 and 24 have been amended to clarify the claim language. Consequently, the Applicants submit that this rejection has been adequately addressed. Thus, this rejection may be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claims 1-24 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hirota et al. (U.S. Patent No. 6,753,144) in view of Blanchard (U.S. Patent No. 6,419,883).

In order to meet its burden in establishing a rejection under 35 U.S.C. § 103 the Office must first demonstrate that the combined prior art references teach or suggest all the claimed limitations. *See Pharmastem Therapeutics, Inc. v. Viacell, Inc.*, 491 F.3d 1342 (Fed. Cir. 2007) ("the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would

have had reason to attempt to make [every element of] the composition or device, or carry out the [entire] claimed process, and would have had a reasonable expectation of success in doing so," (*citing KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007))); *and see Omegaflex, Inc. v. Parker-Hannifin Corp.*, 243 Fed. Appx. 592, 595 (Fed. Cir. 2007) ("[t]he Supreme Court recently explained that 'a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art,'" (*citing KSR Int'l Co.* at 1741)); *and see Dystar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006) ("[once] all claim limitations are found in a number of prior art references, the factfinder must determine '[w]hat the prior art teaches, whether it teaches away from the claimed invention, and whether it motivates a combination of teachings from different references,'" (*citing In re Fulton*, 391 F.3d 1195, 1199-1200 (Fed. Cir. 2004))).

As indicated above, Claim 1 has been amended to incorporate the elements of Claims 5-7 and 20. As such, Claim 1 includes the elements that: "said fabricating is accomplished with a fluid drop deposition device"; "said fluid drop deposition device comprises at least one deposition head and said fabricating comprises modulating the applied activation signal for each ejector of said at least one deposition head to produce said features"; and "said deposition head is under the control of a processor and said method comprises transmitting said feature sizes to said processor, whereby said processor performs said modulating based on said feature sizes."

In addition, as indicated above, Claims 1, 11 and 24 have been amended to include the element that at least one of the fluids dispensed from said fluid drop deposition device is a phosphoramidite fluid.

As disclosed in the Applicants' specification, "the ability to control the size of each feature of an array is provided by the subject methods. That is, the subject methods provide the ability to customize the chemistry or feature size for each feature (e.g., for each synthesized base) on a per surface bound ligand, e.g., probe, basis (as opposed to a per print swath column or per entire substrate or entire

substrate layer basis). Application Specification, pg. 15-16, ¶ [0067]. As such, the rejected claims are directed to a method of in situ array fabrication in which the volume of phosphoramidite fluid dispensed from each ejector of the fluid drop deposition device is controlled by modulating the activation signals or waveforms provided to each ejector, as described above. Moreover, the method specifies that each waveform is modulated for each synthesized base deposited onto the substrate.

In maintaining the instant rejection, the Examiner cites to Hirota, column 15, lines 1-24, and asserts that "Hirota clearly teaches fabrication of an array having features of different sizes wherein the sizes are based on composition (i.e. DNA amount (concentration) or DNA species)." Office Action, pg. 10, lines 9-11. However, the Examiner acknowledges that Hirota is deficient in that it fails to teach or suggest layout determination. Thus, the Examiner relies upon Blanchard to remedy the deficiencies of Hirota.

The Applicants respectfully disagree and contend that a *prima facie* case of obviousness has not been established because the cited combination of Hirota and Blanchard fails to teach all the elements of the rejected claims. Hirota actually discloses that, "The DNA microarray **20** is produced by forming the minute spots **80** by supplying the sample solution onto the base plate **10**". Hirota, col. 6, lines 37-39, and Figs. 2-3. Furthermore, Hirota discloses that producing the DNA microarray includes "a sample preparation step **S2** of preparing the sample solution containing DNA fragment, and a supply step **S3** of supplying the obtained sample solution onto the base plate **10**." Hirota, col. 6, lines 43-46, and Figs. 2-3. In addition, Hirota discloses that the DNA fragments are "PCR product[s] amplified by using a known PCR machine". Hirota, col. 7, lines 8-10.

Thus, Hirota only discloses producing a DNA microarray by affixing DNA fragments obtained by PCR onto a base plate.

Consequently, nowhere does Hirota disclose or suggest the Applicants' claimed method of in situ array fabrication in which the volume of fluid dispensed for

each base from each ejector of the fluid drop deposition device is controlled by modulating the activation signals or waveforms provided to each ejector, as described above. Moreover, nowhere does Hirota disclose or suggest the aspect of the Applicants' claimed method that each waveform is modulated for each synthesized base deposited onto the substrate.

In maintaining the instant rejection, the Examiner asserts that Blanchard discloses determining a layout prior to array fabrication. Office Action, pg. 9, lines 3-7.

The Applicants respectfully disagree. Blanchard is directed to methods for dispensing microdroplets of a solution. Blanchard, col. 3, line 60 to col. 4, line 10. Blanchard actually discloses that, "The program then reads in a list containing the name of an oligo specification file storing the geometry of the desired pattern to be deposited in a particular wafer to be processed in a particular run (step **1005**)." Blanchard, col. 34, lines 1-4. However, similar to Hirota above, nowhere does Blanchard disclose the Applicants' method of in situ array fabrication in which the volume of fluid dispensed from each ejector of the fluid drop deposition device is controlled by modulating the activation signals or waveforms provided to each ejector, as described above. Moreover, nowhere does Blanchard disclose or suggest the aspect of the Applicants' claimed method that each waveform is modulated for each synthesized base deposited onto the substrate.

In view of the above, a *prima facie* case of obviousness cannot be established because the cited combination of Hirota and Blanchard fails to teach all the elements of the rejected claims. Consequently, the Applicants respectfully request that the rejection of Claims 1-24 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the amendments and remarks above, Applicant(s) respectfully submit(s) that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone Bret E. Field, (650) 327-3400.

The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §§ 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1078.

Respectfully submitted,

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